

REMARKS/ARGUMENTS

This Amendment is responsive to the Final Rejection of the Examiner mailed August 12, 2003. With this Amendment, applicants file a Request for Continuing Examination and substitute for product claims 1 to 8 new process claims 9 and 10. In the amendment that follows, applicants set forth their process for correcting the defect which is defined in their specifications as "local modes."

In the remarks that follow, applicants will first summarize the process as now claimed. ~~Thereafter, the references including Po, Muendel and Tankala et al. will be~~ distinguished. Allowability will be urged.

Invention Summarized

The invention relates to an improvement in a process for fabricating an optical fiber. The original process for fabricating an optical fiber includes the steps of providing a core doped with active species. Thereafter, an inner cladding is provided surrounding the core. It is the alteration to the profile of this inner cladding constitutes the improvement to the process.

The original inner cladding has a first polygon profile with discrete sides adjoining one another at a first set of angles. It has the defect that light can be reflected within the inner cladding about the core doped with active species along paths having local modes which do not intersect the core doped with active species. Finally, there is provided an outer cladding surrounding the inner cladding.

The specification is clear about the effect "local modes." Specifically, light is wasted. The light is reflected in circuitous path about the core doped with active species so that it never reaches core. As a result, the light incident upon the inner cladding never takes place in the intended optical amplification.

The improvement to the process for fabricating an optical fiber has additional steps added to the original process. The first polygon profile of the inner cladding is altered to a second asymmetric and symmetry-broken polygon profile having a second set of angles about the core doped with active species. The second asymmetric and symmetry-broken polygon

profile of the inner cladding departs from the first polygon profile with the first set of angles by having small angular changes to at least two of the angles. This gives the second asymmetric and symmetry-broken polygon a second set of angles with the local modes of continuing reflection within the inner cladding minimized and destroyed. Finally, and to realized the preferred embodiments of Figs 11a and 11b, at least one boundary of the asymmetric and symmetry broken polygon is changed to the shape of an arc. Claim 10 points out that the starting polygon can be a rectangle.

References Distinguished

Po United States Patent 6,516,124 discloses a plurality (185 claims) of various geometric shapes, including straight lines and arcs, which may or may not have "local modes." He laboriously claims the respective shapes without disclosing how to remedy the local modes situation if it is encountered. Accordingly, there is no suggestion of the above process.

Muendel United States Patent 5,533,163 discloses polygons having straight lines, which again may or may not have "local modes." Shapes are disclosed which apparently are absent local modes; however, there is no teaching of how to eliminate local modes once they have occurred.

Finally, Tankala et al. United States Patent 6,477,307 discloses a series of straight line and convex curvilinear boundaries between the inner and outer cladding. Again, while specific shapes are disclosed which may or may not have local modes, there is no systematic teaching of process for the elimination of local modes.

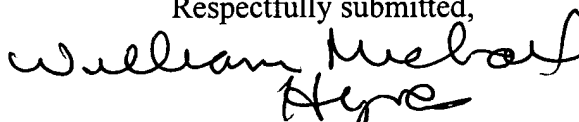
Applicant submits that there is no teaching of his method. Simply stated, when a local mode problem is realized using a polygon shape, applicants method sets forth a simple process which can be followed which will destroy the local modes. Specifically, small angular addition is made to at least two of the angles of the polygon question. After the small angular addition, one of the polygon sides is substituted with an arcuate boundary. There results the elimination of local modes.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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